REMARKS

In the above amendment, claims 1-29 were previously canceled, claims 40 and 42 are amended, claim 41 is canceled, and claim 48 is added.

Rejection of the Claims under 35 U.S.C. Section 103

The Office Action rejected the independent claims 40 and 46 and dependent claim 47 under 35 U.S.C. Section 103 as being unpatentable over U.S. Patent No. 5,805,568 to Shinbashi (the Shinbashi reference) in view of U.S. Patent No. 6,256,292 to Ellis (the Ellis reference). Claims 41-43 were rejected under 35 U.S.C. Section 103 over the Shinbashi reference in view of Ellis and further in view of U.S. Patent No. 6,324,162 to Chaudhuri (the Chaudhuri reference). Claims 44-45 were rejected under 35 U.S.C. Section 103 over the Shinbashi reference in view of Ellis and further in view of U.S. Patent No. 6,282,170 to Bentall et al. (the Bentall reference). However, the claims are new and non-obvious over each of these references, either alone or in combination.

Independent Claim 40 and Dependent Claims 42 through 45

Independent claim 40 requires, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." As discussed in the specification at pages 12, lines 12 through 21, the types of failures that prompt the node to generate overhead signal advising of a failure include not only the layer 1 and layer 2 failures, but also the layer 3 types of network conditions. Accordingly, even a condition such as congestion in a communication link may prompt nodes on the network to switch from a first to a second ring. As such, even layer 3 conditions that have in the past gone undetected for as long as a minute or more, are detected and responded to by the inventive systems quickly.

U.S. Patent No. 5,805,568 to Shinbashi

The Shinbashi reference fails to disclose the requirement of claim 40, inter alia, of, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." As stated in

the Office Action, page 3, end of first paragraph, the Shinbashi reference fails to teach of the failure indication being contained in the overhead of a synchronous optical signal.

Furthermore, the Shinbashi reference fails to teach that such a failure indication in the synchronous optical signal overhead may be generated in response to a layer 3 condition such as traffic congestion. As stated at column 8, lines 12 through 15, the failure detecting unit 100 monitors ATM cell received by the tributary interface unit for the LAN in order to detect insufficient synchronization of the ATM cell. When detected, as stated at column 8, lines 33 through 36, an OAM cell is transmitted into a channel for managing the optical fiber. So the Shinbashi reference teaches away from the requirements of the claims that a failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network.

U.S. Patent No. 6,256,292 to Ellis

The Office Action states that the Ellis reference teaches of a protection path switched technique for use in a fiber optic ring network that includes a failure indication in the overhead of the synchronous optical signal. However, this teaching does not meet the requirements of the claims.

Claim 40 requires, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." As discussed in the specification at pages 12, lines 12 through 21, such layer 3 conditions have in the past gone undetected for as long as a minute or more and are detected and responded to by the present inventive systems quickly.

The Ellis reference merely discloses a typical SONET system that indicates line failures in the K1,K2 bytes of overhead, as seen in Figures 3 through 5 and 13. As stated at column 8, lines 44 through 45, the failures being described in the Ellis reference are when fibers 2 and 4 are cut.

Combination of the Shinbashi reference and the Ellis reference

Even if combined, the Shinbashi reference and the Ellis reference would fail to meet the requirement of claim 40, *inter alia*, of, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the

fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." The Ellis reference merely discloses a typical SONET system that indicates line failures in the K1,K2 bytes of overhead, as seen in Figures 3 through 5 and 13. If combined with the Shinbashi reference, it would only teach to include indications of line failures in K1,K2 bytes of overhead. Nowhere do the references, either alone or in combination, teach that layer 3 types of failures, such as traffic congestion, be a failure indication in the overhead of the synchronous optical signal.

U.S. Patent No. 6,324,162 to Chaudhuri

The Chaudhuri reference fails to add to the teachings of the Shinbashi reference or the Ellis reference to meet the requirements of the claims. In specific, claim 40 requires, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." Similarly to the Ellis reference, the Chaudhuri reference merely discloses transmitting Layer 1 or Layer 2 type failures in overhead bytes. As stated at column 6, lines 21 through 25, "Upon the failure of a working channel in link 14 between the nodes 12A and 12D, the nodes 12A and 12D detect the failed channel because of a Loss of Signal (LOS), Loss of Frame (LOF) or Signal Degrade (SD). Upon detecting a failed channel, the nodes 12A and 12D communicate this event, typically via overhead bytes in the traffic signals . . ." Nowhere does the Ellis reference discuss indicating Layer 3 type conditions, such as traffic congestion, in synchronous optical network overhead.

U.S. Patent No. 6,282,170 to Bentall et al.

The Bentall reference fails to teach the requirements of claim 40, *inter alia*, of, "wherein the failure indication in the overhead of the synchronous optical signal indicates a failed link or congested traffic conditions on a link in the fiber optic ring network, and wherein the failure indication includes information on type of problem and link location." The Bentall reference fails to even discuss overhead of the synchronous optical signals or type of failure indications in such overhead.

For the above reasons, the references fail to disclose or suggest the requirements of claim 40 and dependent claims 42 through 45.

Independent Claim 46 and Dependent Claim 47

Independent claim 46 requires the step of, "receiving a failure indication in overhead bytes of the synchronous optical network that an adjacent link has a failure or traffic congestion." As discussed in the specification at pages 12, lines 12 through 21, the types of failures that prompt the node to generate overhead signal advising of a failure include not only the layer 1 and layer 2 failures, but also the layer 3 types of network conditions. Accordingly, even a condition such as congestion in a communication link may prompt nodes on the network to switch from a first to a second ring. As such, even layer 3 conditions that have in the past gone undetected for as long as a minute or more, are detected and responded to by the inventive systems quickly.

As discussed above, the references cited in the Office Action fail to teach or disclose the requirements of claim 46. The Shinbashi reference fails to teach that such a failure indication in the synchronous optical signal overhead may be generated in response to a layer 3 condition such as traffic congestion. As stated at column 8, lines 12 through 15, the failure detecting unit 100 monitors ATM cell received by the tributary interface unit for the LAN in order to detect insufficient synchronization of the ATM cell. When detected, as stated at column 8, lines 33 through 36, an OAM cell is transmitted into a channel for managing the optical fiber.

The Ellis reference merely discloses a typical SONET system that indicates line failures in the K1,K2 bytes of overhead, as seen in Figures 3 through 5 and 13. Similarly to the Ellis reference, the Chaudhuri reference merely discloses transmitting Layer 1 or Layer 2 type failures in overhead bytes. As stated at column 6, lines 21 through 25, "Upon the failure of a working channel in link 14 between the nodes 12A and 12D, the nodes 12A and 12D detect the failed channel because of a Loss of Signal (LOS), Loss of Frame (LOF) or Signal Degrade (SD). Upon detecting a failed channel, the nodes 12A and 12D communicate this event, typically via overhead bytes in the traffic signals . . ." And finally, the Bentall reference fails to even discuss overhead of the synchronous optical signals or type of failure indications in such overhead.

Thus, for these reasons, the references fail to disclose or suggest the requirements of claim 46, *inter alia*, of, "receiving a failure indication in overhead bytes of the synchronous optical network that an adjacent link has a failure or traffic congestion."

Independent Claim 48

Independent claim 48 requires, "a network condition unit for periodically determining if a failure has occurred in an adjacent link to the label switched router, wherein the failure may include traffic congestion conditions," and "a network interface unit that inserts a routing label on received packets, converts the packets to a synchronous optical signal for transmission on the fiber optic ring network and in response to a failure being indicated by the network condition unit, inserting a failure indicator in overhead of the synchronous optical signal." As discussed in the specification at pages 12, lines 12 through 21, the types of failures that prompt the node to generate overhead signal advising of a failure include not only the layer 1 and layer 2 failures, but also the layer 3 types of network conditions. Accordingly, even a condition such as congestion in a communication link may prompt nodes on the network to switch from a first to a second ring. As such, even layer 3 conditions that have in the past gone undetected for as long as a minute or more, are detected and responded to by the inventive systems quickly.

For similar reasons discussed above, the references cited in the Office Action fail to teach or disclose the requirements of claim 48. The Shinbashi reference fails to teach that a failure indication in the synchronous optical signal overhead may be generated in response to a layer 3 condition such as traffic congestion. As stated at column 8, lines 12 through 15, the failure detecting unit 100 monitors ATM cell received by the tributary interface unit for the LAN in order to detect insufficient synchronization of the ATM cell. When detected, as stated at column 8, lines 33 through 36, an OAM cell is transmitted into a channel for managing the optical fiber.

The Ellis reference merely discloses a typical SONET system that indicates line failures in the K1,K2 bytes of overhead, as seen in Figures 3 through 5 and 13. Similarly to the Ellis reference, the Chaudhuri reference merely discloses transmitting Layer 1 or Layer 2 type failures in overhead bytes. As stated at column 6, lines 21 through 25, "Upon the failure of a working channel in link 14 between the nodes 12A and 12D, the nodes 12A and 12D detect the failed channel because of a Loss of Signal (LOS), Loss of Frame (LOF) or Signal Degrade (SD). Upon detecting a failed channel, the nodes 12A and 12D communicate this event, typically via overhead bytes in the traffic signals . . ." And finally, the Bentall reference fails to even discuss overhead of the synchronous optical signals or type of failure indications in such overhead.

Thus, for these reasons, the references fail to disclose or suggest the requirements of claim 48, *inter alia*, of, "a network condition unit for periodically determining if a failure has occurred in an adjacent link to the label switched router, wherein the failure may include traffic congestion conditions," and "a network interface unit that inserts a routing label on received packets, converts the packets to a synchronous optical signal for transmission on the fiber optic ring network and in response to a failure being indicated by the network condition unit, inserting a failure indicator in overhead of the synchronous optical signal."

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CONCLUSION

For the above reasons, the foregoing amendment places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 477-9109.

Respectfully submitted,

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